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(56) Documents Cited

AU 000550239 A US 4569347 A

(58) Field of Search

UK CL (Edition N) A1E EAGX EAJ
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Online:WPI

(54) Individual spiral tree shelters

(57) An individual spiral tree shelter consists of a translucent spirally slit tube 1. The tree shelter may include an internal support 2 and an external support 3. The tree shelter is preferably made from a plastics material. When the tube is placed over a newly planted seedling the tree is both protected against browsing animals and encouraged to grow more rapidly by the raised temperature and humidity within the tube. A particular advantage of the slit spiral guard is its ability to expand as the tree grows.

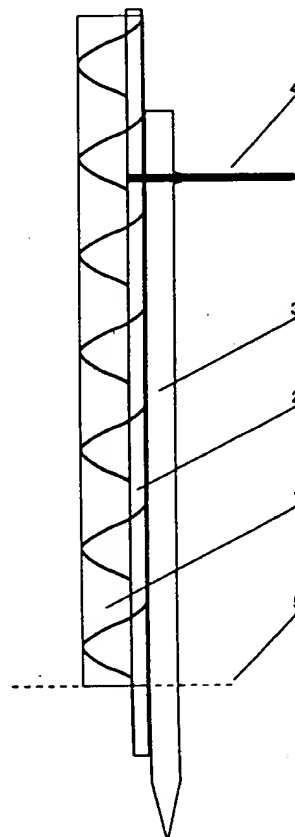


Figure A

GB 2 289 398 A

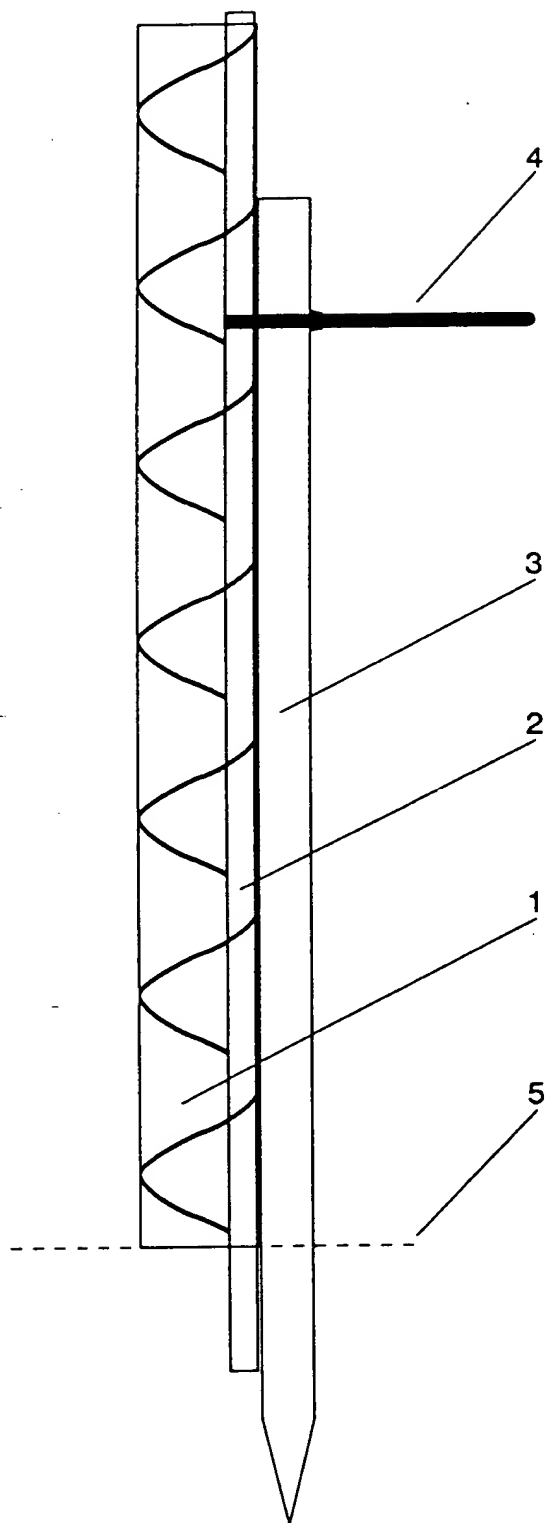


Figure A

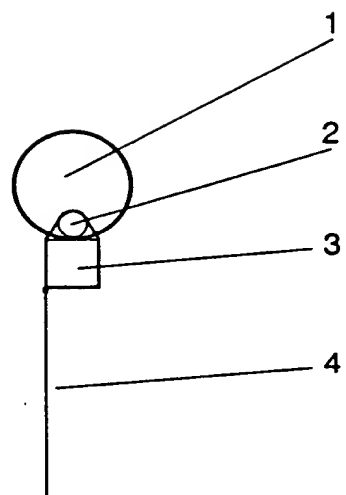


Figure B

Patent SpecificationIndividual Spiral Tree Shelters.

This invention relates to a design of plastic spirally slit tube which acts as a shelter to both improve the growth of and protect young trees.

Various designs of tree shelter are currently manufactured in the United Kingdom. All are made of a translucent plastic formed in some way into a tube. When the tube is placed over a newly planted seedling or transplant the tree is both protected against browsing animals and encouraged to grow more rapidly by the raised temperature and humidity within the tube.

Newly planted trees protected by tree shelters are normally shorter than their shelters. The tree is intended to grow within the shelter to emerge in due course out of the top. Therefore the plastic of the tube must be sufficiently translucent to allow enough light transmission for normal growth.

An alternative means of protecting the stem of a small tree from small browsing mammals, such as rabbits and hares, is by the use of a spiral guard which is an opaque plastic tube, with a slit spiralling down from top to bottom. Such a guard is intended to be wrapped around the lower stem of a tree taller than the guard. The foliage of the tree is not enclosed within the tube and therefore the plastic does not need to be translucent.

If a seedling or transplant is enclosed within a spiral guard made of a translucent plastic the guard performs as a shelter and the tree grows within the tube.

A tree shelter is normally a relatively rigid tube, simply supported by being tied at one or two points to an external stake. A spiral guard is normally supported by the tree whose stem it protects. A spiral guard being slit in a spiral fashion has little rigidity and cannot be supported adequately in a vertical position merely by being tied at one or two points to an external stake.

A particular advantage of the slit spiral guard is its ability to expand as the tree grows. Rigid tree shelters can restrict stem diameter growth unless the plastic has degraded before the stem expands to fill the tube. Another problem with tree shelters is their tendency to fill up with water, causing the stem of the tree to produce roots and sometimes to be killed; spirally slit tubes cannot fill with water because the water will drain through the slit.

This invention has been developed to enable a slit spiral tube of translucent plastic to be used as a tree shelter whilst retaining the ability of the tube to be opened by the growing tree and to be free draining.

According to the invention the shelter consists of a translucent tube open at both ends with a single slit running in a spiral around the tube from one end to the other. The shelter is held in a vertical position over the plant by an internal support, such as a cane, rod or pipe, driven into the ground and attached to the shelter, perhaps by means of a tie or clip. If an external support, such as a timber stake, is required in addition to the internal one, to provide a more rigid means of erection, this stake is fitted adjacent to the internal support so as to sandwich the tree shelter plastic between the two supports, and tied to the shelter at the same point as the internal support is attached.

One convenient way of attaching the internal support to the shelter is to pass a ratchet action tie into the tube from the outside through a hole in the plastic, around the support and back out of the tube via the same or an adjacent hole. When pulled tight the support will be held firmly against the tube.

If an external support is required in addition to the internal support a longer tie can be used to pass around both supports. When pulled tight the shelter is sandwiched firmly between the two supports but can still be opened by the expanding stem of the growing tree.

The accompanying drawing illustrates this means of attachment:

Figure A shows the device viewed from the side, with 1 the spirally slit tube, 2 the internal support, 3 the optional external support and 4 a tie holding the internal support firmly against the inside of the tube and the external support, if used, firmly against the outside of the tube. The soil level is indicated by the dotted line 5.

Figure B shows the device viewed from above, with the same components as in Figure A.

CLAIMS

1). A translucent tube open at both ends with a single slit running in a spiral around the tube from one end to the other.

2). A translucent tube as claimed in Claim 1 wherein one or more holes are provided in the wall of the tube to enable a tie to be fitted to attach the tube to one or more supports.

Patents Act 1977
Examiner's report to the Controller under Section 17
(1) Search report

Relevant Technical Fields

- (i) UK Cl (Ed.N) A1E (EAJ, EAGX)
(ii) Int Cl (Ed.6) A01G 13/00, 13/10

Search Examiner
P A MAKIN

Date of completion of Search
19 JUNE 1995

Documents considered relevant
following a search in respect of
Claims :-
1-2

Databases (see below)

- (i) UK Patent Office collections of GB, EP, WO and US patent specifications.
(ii) ONLINE: WPI

Categories of documents

- X:** Document indicating lack of novelty or of inventive step. **P:** Document published on or after the declared priority date but before the filing date of the present application.
Y: Document indicating lack of inventive step if combined with one or more other documents of the same category. **E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.
A: Document indicating technological background and/or state of the art. **&:** Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages	Relevant to claim(s)
X	AU 550239 (BATES) whole document	1, 2
X	US 4569347 (FRISBIE) see tubular member 12	1

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).